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## Mobile Commerce: Indian Perspectives

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**ABSTRACT:** The purpose of this research paper is to analyse the significant growth of Mobile commerce in India. E-commerce refers to all forms of commercial transactions that involve individuals and organizations based on the electronic processing of data whereas Mobile commerce (M-commerce) is the buying and selling of goods and services using mobile phones. M-commerce is at emerging level in India. The need for mobility seems to be a primary driving force behind M-Commerce applications such as Mobile Banking, Mobile Entertainment and Mobile Marketing etc. This paper lists the issues being faced by the Indian M-commerce industry. Earlier, business strategies were based on limited geographical reach and scope for the growth. M-commerce industry is young in India. 9% Indians are using smartphones for the purpose of rapidly consuming contents such as gaming, videos, songs and entertainment on their smart devices and this leads to steady growth in mobile advertising and apps industry. Smartphone penetration will increase from 8% by end 2014 to more than 21% in 2017. No doubt mobile commerce needs some development in specific area like secure transaction, better shopping experience and enhanced graphics.

**KEYWORDS:** E-Commerce, M-Commerce, Tools used in M-commerce, Mobile Payment Methods, Services.

### I. INTRODUCTION

The increase of mobile phone usage has produced a new avenue for marketing applications and services. Mobile has become the leading way for accessing communications because setting-up mobile network is cost-efficient but also mobile provides greater flexibility and ease to users than landline phone. Mobile is the latest happening thing not only in India but in the world. By the advent of latest technologies in mobile handsets and sophisticated services by service providers in Indian Mobile telecom market is a buzz. Mobile entered in India in 1995 but penetrated so fast with in a decade that it has become a necessity for every individual. Not only in Indian urban market but rural market penetration is also great. Mobile subscribers have grown from 7.94 lakhs to 52.41 crores from December 1997 to December 2009. India is expected to have close to 165 million mobile internet users by march 2015, up from 87.1% in december 2012. Making India the fastest growing mobile phone market. By using m-commerce we can access advanced mobile applications and highspeed services and we can use this devices remotely, anywhere, at any time. We can use the same hand held device for both Telecommunications and for bill payment and account evaluation. M-commerce is an advanced technology of e-commerce. In short, Mobile commerce is defined as the buying and selling of products and services through the use of wireless mobile devices.

**COMMERCE:-**Commerce deals with exchange of goods and services of economic value between producer and consumer. With invention of new technologies and methods, commerce has taken many forms. The way of dealing, exchanging of goods and services has undergone massive changes with days passed on. With competition emerging, consumers becoming more aware and having more choice, marketers searching for innovative ways to deals with customers to be in forefront to break the competition.

**E-COMMERCE:-** E-commerce is buying and selling of products, services by business and consumers through an electronic medium, without using any paper documents. E-commerce, stands for electronic commerce, on the internet, it pertains to a website, which sells products or services directly from the site using a shopping cart or shopping basket system and allows payments through cards, e-banking, cash on delivery. Customers can purchase anything by sitting comfortably in their office or home and gift it to someone sitting miles apart just by click of a mouse. It offers several benefits to businesses like easily reaching to a fast growing online community, providing unlimited shelf place for products and services, merging the global geographical and time zone boundaries and helping to reach national and global markets at low operating costs. Ease of internet access and navigation are the critical factors that will result in rapid adoption of E-commerce. Safe and secure payment modes are essential to popularize E-commerce in



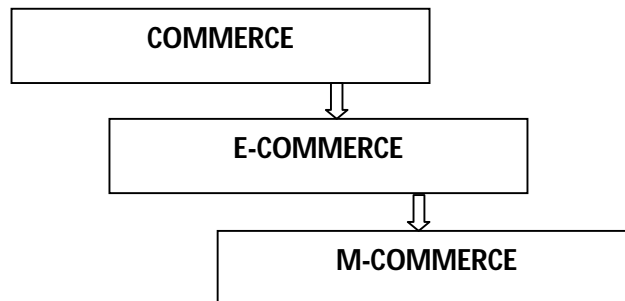
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India. Though it offers many benefits to users, there are many reasons for not shopping online like are lack of trust, security concerns, uncertainty about product and service quality, delay or non-delivery of goods, and lack of touch-and-feel shopping experience.

**MOBILE COMMERCE:-** Mobile Commerce is known as M-Commerce. M-Commerce are used to buy and sell goods by using the wireless devices like cell phones, personal digital assistants and other hand held devices that have operated with Internet access. By using M-Commerce we can access advanced mobile applications and highspeed services and we can use this devices remotely, anywhere, at any time. We can use the same hand held device for both Telecommunications and for bill payment and account evaluation. M-commerce is a subset of E-commerce'.



The time and space limitation are removed and we can access any time we need. It is a result of combining two strongly emerging trends: electronic commerce and omnipresent computing. It is online anywhere, anytime and on any device and is providing new business opportunities.

**“Internet + Wireless + E-Commerce = M-Commerce”**

Mobile Commerce is still in its development phase in India, here it is primarily used for basic banking, purchase of tickets, payment of utility bill etc. Its presence is being felt in the business world. Companies like Airtel, ICICI, Reliance, Tata etc. are using this technology to facilitate their customers to make payments for the things they have purchased from their phones. Considering the market growth of m-commerce mobile manufacturing companies are making WAP enabled phones and are also providing maximum wireless internet and web facilities that covers the personal, official and business needs of people and are also optimizing their business. Devices used in m-commerce Mobile phone, PDA (Personal Digital Assistant), Smart phone-the smart phone combines mobile, phone and PDA technology into one device, Laptop.

## II. M-COMMERCE VS E-COMMERCE

M-Commerce is a subset of E-Commerce. Some of the advantages of M-Commerce over E-commerce:

- Consumers can access the service in M-commerce at any place which is not possible in E-Commerce
- M-Commerce is more secure than E-Commerce as users have authentication number.
- M-Commerce is more convenient than E-Commerce in terms of using, carrying and handling the mobile devices.
- Internet connectivity is always needed in e-commerce but m-commerce does not have such boundaries.
- Video conferencing can also be done through m-commerce but it is not possible in e-commerce.
- Electricity is also one of the factor of necessity which is not in m-commerce.
- M-commerce is costlier than e-commerce.
- M-commerce is much easier than e-commerce.



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## III. TECHNOLOGY USED IN M-COMMERCE

Technology	M-Commerce
Device	Smart phones, PDAs
Operating System	Symbian (EPOC), Palm OS, Pocket PC, proprietary platforms.
Presentation Standards	HTML, WML, HDML, i-Mode
Browser	Phone.com UP Browser, Nokia browser, MS Mobile Explorer and other micro-browsers
Bearer Networks	GSM, GSM/GPRS, TDMA, CDMA, CDPD, paging networks

## IV. TOOLS FOR MOBILE COMMERCE

In present market, number of mobile tools available for the companies to engage customer in business, the following are some of the technologies that are help in reaching the customers:

**1. SMS:** SMS (Short Message Service) is short messaging service which consists of 160 characters of black and white. It is the widely used and cheapest form of mobile marketing. Companies can send bulk messages and customers can also respond in the same form to order a product or services

**2. MMS:** MMS (Multi-media Message Service) is Multimedia Message Service. This Consists of time slide show of images, text audio and video. Mobile set with color screen are capable of sending and receiving standard MMS message. Product demonstration, use and other things can be done with help of MMS to convince customers to buy products or services.

**3. Mobile Web Applications:** Accessing web page on mobile devise is an option. Yahoo, Google and other mobile content providers have been selling advertising placement on their properties. Customer can access the products or services through the web pages of the companies through mobile phones .

**4. Bluetooth:** A Bluetooth message can be circulated with in a 10meter range, retailers, mall owners and small business holders use this tool to sell their product to the customers who come to in the proximity of that area.

**5. Location-based marketing:** Location based marketing helps to locate the customer location via GPS (Global Positioning System) technology and company delivers the contents, offers relating to that particular location.

**6. Voice:** Voice based marketing over the mobile is emerging form of marketing. Interactive voice Response (IVR) is very popular and companies use to offer various services to their customers. A customer has to follow the instructions recorded on the system at the other end.

## V. M-COMMERCE SERVICES

M-Commerce is an emerging discipline involving applications, mobile device, middleware, and wireless networks. While most of existing E-Commerce application can be modified to run a wireless environment, M-Commerce also involves many more new applications that become possible only due to the wireless infrastructure. These applications include mobile financial services, user and location specific mobile advertising, mobile inventory management, wireless business re-engineering, and mobile interactive games. In addition to device and wireless constraints, M-commerce would also be impacted by the dependability of wireless infrastructure. M-Commerce existing and futures possible application include:



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<b>M-commerce services and applications</b>	
Mobile Banking	<ul style="list-style-type: none"><li>• Mobile Accounting</li><li>• Mobile Brokerage</li><li>• Mobile Financial Information</li></ul>
Mobile Entertainment	<ul style="list-style-type: none"><li>• Mobile Gaming</li><li>• Download of Music and Ring tones</li><li>• Download of Video and Digital Images</li><li>• Location-Based entertainment services</li></ul>
Mobile Information Services	<ul style="list-style-type: none"><li>• Current affairs(financial,sport and other news)</li><li>• Travel information</li><li>• Tracking services(persons and Objects)</li><li>• Mobile search engines</li></ul>
Mobile Marketing	<ul style="list-style-type: none"><li>• Mobile Couponing</li><li>• Direct(Context-Sensitive) Marketing</li><li>• Organization of Mobile Events</li><li>• Mobile newsletters</li></ul>
Mobile Shopping	<ul style="list-style-type: none"><li>• Mobile purchasing of goods and services</li></ul>
Mobile Ticketing	<ul style="list-style-type: none"><li>• Public Transport</li><li>• Sports and cultural Events</li><li>• Air and rail Traffic</li><li>• Mobile Parking</li></ul>
Telematics Services	<ul style="list-style-type: none"><li>• Remote diagnosis and maintenance of vehicles</li><li>• Navigation services</li><li>• Vehicle tracking and theft protection</li><li>• Emergency Services</li></ul>

## VI. MERITS OF M-COMMERCE

1. Mobility- as users can carry their cell phones or other mobile devices easily.
2. Broad reaches ability/ Ubiquitous computing- people can be contacted anywhere and at any time. It is also convenient and provides instant connectivity.
3. Ubiquity-information can be accessed easily and in a real-time environment.
4. Convenience-as the devices facilitates storage of data and has Internet, intranet, extranet connections so it is convenient.
5. Localization of products and services-knowing where the user is located at any given time.
6. Very personal-Device owner has an exclusive access to the contents/services and the service providers keeps the identity of the owner.
7. Varied users-Elementary school students, grandpas, grandmas are the varied users that uses m-commerce and from varied location.
8. Ambidextrous -Work & Play: Business purpose +Personal fun.
9. Willingness-People seem willing to pay for mobile services

## VII. DEMERITS OF M-COMMERCE

1. Small screens of most devices still limit types of file and data transfer (i.e. streaming videos, etc.)
2. Standards guiding applications and technology development and connection(s)
3. WAP and SMS limited to small number of characters and text.
4. Use of graphics limited
5. Less functionality for mobile Internet over mobile phones and existing generation of handhelds than for mobile computers (laptops and next generation handhelds)
6. Consumers fear for their privacy.



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7. Easier for information to get stolen.
8. It has taken a while for businesses/consumers to accept m-commerce.
9. It prevents face-to-face customer service. (less personal)
10. Not all cell phones are capable of m-commerce yet.(new technology)
11. User interface is often difficult to learn how to use
12. Limited bandwidth
13. Cost of establishing mobile and wireless broadband Infrastructure

## VIII. MOBILE PAYMENT

This term refers to payments that are made via mobile hand-held devices in order to purchase goods and services. Mobile payment services usually act as an intermediary between consumer and vendor. Prominent examples of such services are “Mobile Wallet”, a service by T-Mobile, and the “M-Pay” of Vodafone. It is a hybrid form of payment that combines elements from other methods of payment, e.g. credit cards, prepaid cards, invoicing and telephone bills. Types of Mobile transactions / payments:

**1. Mobile web payments:** Through web pages payment is made under this system, to make payment customer has to enter mobile phone number and password on micro browser of web page, then a text message from the partner bank is received after verification of password. Customer has to confirm the bank by sending an SMS; finally payment is directly debited from the bank account of the customer.

**2. Mobile phone based payments:**

**a) SMS based transactional payments:**

In this method, customer can make payment through mobile phone by sending an SMS to the retailer. Both the customer and the retailer must have a regular credit or debit card account in one of the partner banks of the payment service provider like paymate, mcheck, gpay. After selecting an item for purchase the customer sends an SMS to the retailer requesting the purchase. The retailer responds by sending a payment request through SMS to the customer. The customer keys in the banks PIN number to approve the payment. After verification of PIN bank debits the customer account.

**b) Direct mobile billing:** In this method, purchase amount is added to the monthly mobile bill of the customer or payment is debited from prepaid account. This is used to purchase ring tones, videogames, music, wallpapers etc.

**3. Card based mobile payments:**

- **credit card based payments:** Users enter the PIN provided by the bank of credit card for mobile transactions from mobile along with the amount to be paid.
- **smart card based payments:** smart card are plastic cards with embedded integrated circuits containing micro processors and the memory to store personal data such as credit card number, driving license number ,bank account number, insurance information, personal identification number (PIN).

**4. Mobile wallets:** In this system, mobile phone users open a mobile wallet account in an issuing bank and deposit cash to get mobile account number. After purchase, through mobile phone users type in account number and send it to the issuing bank via SMS. Mobile wallet’s automated system check’s for sufficient balance and payment amount is debited from the users account.

## IX. USAGE OF MOBILE IN INDIA

Mobiles are used everywhere. In India mobiles are currently used primarily for passing and sharing information using SMS and voice. However, the use value added services is evident from the increase in share of revenues generated from value added services as a proportion of total revenues of mobile industry increased from 7.26% in June 2005 to 9.58% in September 2005; which amounts to more than 2% rise within a quarter. The corresponding figures for revenues for SMS show a rise from 5.25% to 5.4% . This rise has resulted from introduction of voting based participative TV Programs, voting on some socio-economic-political issues in Newspapers, SMS based contests on mobile, MMS etc. Students are major consumers of wallpaper, ring tone, mobile games, music and video clip download services available on portals as well as mobile portals. Other services like micro payment facility are also being offered though only by



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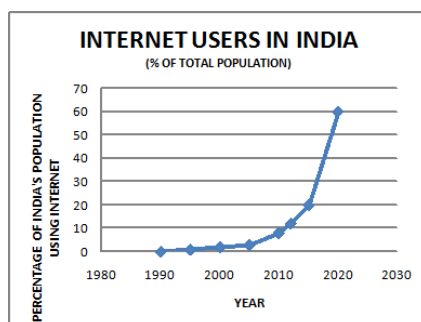
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one or two operators. GPRS based services are being offered by mobile operators on a limited scale. The revolutionary success of India's mobile industry is well known.

- India has more than 160 million Internet users, of which 86 million access Internet using their mobile devices
- In the last 3-4 years, the number of users who access the Internet through a 3G connection has grown to round 22 million, To put things in perspective, compare this with the 15 million fixed line broadband connections accrued over the last 17 years
- There are over 36 million smartphone users as against 60 million PC users.
- 9% of overall Internet pageviews in India come from mobile devices.
- Over 40% of searches on Google originate from mobile device.
- 30% of Facebook users in India are mobile-only Internet users and 30% of new registrations are coming through mobile
- LinkedIn ranks India among its top 4 growth markets for mobile usage

## X. FUTURE OF MOBILE COMMERCE IN INDIA

The future Mobile commerce is the next logical step for Indian merchants. With the growth of mobile phones and increased issuing and use of debit and credit cards, mobile commerce will deliver strong growth over the coming years. Mobile technology gives us the edge over our competitors. First Data's mobile commerce solutions can help businesses meet the growing demands of the mobile and social media revolution. Social media networks such as Facebook are likely to increasingly become channels for sales and consumer engagement. First Data already offers a loyalty solution for the Facebook social media network as well as mobile payments opportunities using our Trusted Service Manager (TSM) service, which powers part of the Google Wallet which has made headlines recently. With Google Wallet, millions of consumers will no longer need to carry their leather wallets. This mobile application securely stores credit cards, offers, gift cards and more on their mobile phone. This virtual wallet is changing the face of commerce by enabling customers to simply make "tap and go" payments with their mobile devices, while increasing loyalty at merchant locations. Although m-commerce market in India is still in its initial phase, India is getting richer and phones are getting cheaper. It is also estimated that, by 2020, 80% of the mobile devices used in the country will be smartphones. Many e-tailers have realized the potential of mobile commerce in multiplying their sales and are rapidly adopting the necessary tools, with encouraging results. Snapdeal.com, for example, gets over half of its sales from customers using mobile devices, while even one year ago the share of mobile purchases was a mere 5%. Flipkart, the largest online shopping platform in India, receives 20% of its e-commerce orders from customers using mobile devices and plans to increase this number to as much as 50% in future. India has more than 100 million users in India, of which nearly 84 million access the site through mobile phones. This suggests the rise of the "mobile first" generation of internet users.



## XI. FUTURE CHALLENGES IN INDIA

The major challenges in implementing M-commerce in India is that the players in the m-commerce field like mcheck, obopay, paymate etc. need users to link one of their banking instruments like the credit card, debit card, bank account to their mobile phone with the help of software installed on phone and the common man is not willing to share such information on the phone as he still think that his information can be hacked. No doubt it is a big leap in India but from



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the security point, it is still at its development stage. Service providers use WAP and SMS as the medium for providing services like facilitating people to pay through their mobile phones. But these services has not reached its peak as the service providers are unable to link with the banks also the common people do not agree in sharing their credit/debit card information.

## XII. CONCLUSION

Mobile Commerce is known as M-Commerce. M-Commerce are used to buy and sell goods by using the wireless devices like cell phones, personal digital assistants and other hand held devices that have operated with Internet access. There are different limitations in Mobile commerce but Now mobile companies are spending more to protect their customers and their Information from hacking. The good news is that the sources of consumer frustration like slow transmission speeds, difficult user interfaces and high costs - are being addressed by operators and equipment manufacturers. Mobile commerce has gain a huge popularity although it is in its initial phase in india. Mobile commerce play important role inefecting human life. Mobile Commerce's future seems to be extremely safe.

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